

## Physicochemical analysis and isolation of microbes from groundwater nearby landfill site: A case study

Abhishek Khapre<sup>1</sup>, C Lakshmiathan<sup>2</sup> & Sunil Kumar<sup>1\*</sup>

<sup>1</sup>Solid and Hazardous Waste Management Division; <sup>2</sup>Water Technology and Management Division, CSIR-National Environmental Engineering Research Institute (NEERI), Nehru Marg, Nagpur-440 020, Maharashtra, India

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The massive generation of waste due to increased human population and industrialization, by, has polluted water resources with different harmful contaminants. Leachate generated from municipal solid waste landfills has a wide range of effects on both groundwater and surfacewater in terms of quality and the living organisms of its ecosystem. The availability of good quality water is an indispensable feature for preventing diseases and improving quality of life as well as preventing chronic poisoning in organisms living nearby. A systematic study was carried out to assess the water quality index in Bhandewadi area of Nagpur, Maharashtra, India. Water samples were collected from nearby areas of the Bhandewadi landfill site and various physicochemical characters, such as pH, colour, odour, turbidity, alkalinity, total dissolved solids (TDS), total suspended solids (TSS) and electrical conductivity were monitored. Microbes were also isolated and characterized to determine its type. Morphological and various biochemical tests were performed. The isolated bacterial colonies showed different characteristics in various biochemical tests. Antibiotic susceptibility test was also performed to determine the resistance against standard antibiotics. Based on the zone of inhibition, the isolated microbes showed a wide range of resistance. They have conditional clinical applications from these strains and could also be used as a tool *in situ* removal of heavy metals from leachate and groundwater.

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